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U.S. EXPORTS TO JAPAN: A REVIEW OF 1983 SALES

Summary

Sluggish world market conditions and the continuing high level of the dollar took a heavy toll on U.S. exports in 1983 for the second year in a row. Sales to Japan were one of the few bright spots in the otherwise dismal export picture. Overcoming the twin obstacles of a strong dollar and weak domestic economic growth in the year's first half, exports expanded 4.4 percent to $21.9 billion. Food and feed commodities, which had fallen by 15.7 percent in 1982, led the way, rebounding 11.7 percent to nearly $5.6 billion. Exports of capital goods (including automotive products) reversed course as well, with a 15.4 percent gain to $5.1 billion replacing a year-before loss of 7 percent. Moreover, consumer goods remained firmly entrenched in the plus column, increasing 2.8 percent to $1.4 billion on top of an earlier rise of 2.9 percent. Industrial supplies provided the only sour note as exports, after expanding by 2.1 percent in 1982, contracted 4.8 percent to $8.7 billion, partly in reaction to some overbuying the previous year.

Export Profiles

Industrial Supplies - The much-delayed recovery of Japanese manufacturing output in 1983 brought little relief to U.S. exporters of key intermediate goods since the rebound largely bypassed the smokestack industries that are among the big consumers of imported industrial supplies. Coal was a case in point. Weak domestic demand, particularly in the important construction sector, cut Japanese steel production for the fourth year in a

row, dropping it to the lowest level since 1972. This slide obviously did not bode well for American coking coal companies, especially those that are swing suppliers to the steel mills. What really hurt U.S. export prospects, though, was the fact that Japanese steel manufacturers were overcommitted on coking coal deliveries from Australia and Canada. Long-term contracts signed with mines in these two countries during the steel boom of the early 1970s or later in the decade, when concern about future coal shortages swept the industry, saddled steel makers with supplies far in excess of their 1983 coking coal requirements. To make room for these shipments, the mills pared their purchases from U.S. producers, which only have year-to-year delivery contracts. The result: coking coal exports from this country dropped 27.9 percent to 16.1 million tons, while arrivals from Australia went up by a tenth to 31.1 million tons and Canadian deliveries expanded by a slightly smaller margin to 11.3 million tons. With a similar scenario slicing American steam coal shipments to Japanese electric utilities almost in half to 1.7 million tons, U.S. bituminous coal exports contracted 34.3 percent in 1983 to $1 billion.

While homebuilding is not usually considered a smokestack industry, in Japan it shares many of the characteristics of the manufacturing industries covered by this rubric. Japanese housing starts fell in 1983 for the fifth consecutive year and hit a 16-year low. Moreover, the proportion of wooden houses in total residential construction edged down again -- a casualty of more prefabricated housing and high-rise apartment buildings. For American and other foreign suppliers of softwood logs for home construction, however, these trends did not translate into the expected shipment decline, even though Japanese wholesalers and sawmills entered 1983 with above-normal stocks. In fact, U.S. log exports, made up almost entirely of softwood species, expanded 2.5 percent to 2 billion-plus board feet, leading to another hike in inventories. Moreover, neither the housing slump nor the increased competitiveness of Japanese lumber cut from foreign logs curtailed purchases of American lumber, which inched up 0.6 percent to 632 million board feet. Sawmills here picked up some of the slack from lower Canadian lumber exports, but the main factor propping up U.S. shipments was a planned inventory buildup in Japan. Unfortunately, higher shipment levels did not cancel out the effects of weak Pacific Northwest softwood log prices, and the value of log and lumber exports fell 13.9 percent to $0.9 billion.

For other groups of U.S. exporters, the problems of Japan's smokestack industries meant new or expanded sales opportunities. Nowhere was this more obvious than in petroleum refining. Continuing sluggish demand at home forced Japanese oil refiners to cut their operating rate again in 1983. Much of this adjustment fell on heavy (residual) fuel oil, leaving the country particularly short on bunker fuel used in coastal shipping. California petroleum producers, saddled with large inventories of refined products, were well positioned to provide bunker fuel and other products in short Japanese supply, including light (distillate) fuel oil, generally used by industry as a fuel. With shipments of heavy fuel oil up sharply and sales of petroleum coke still rising, U.S. exports of petroleum products increased 3 percent last year to $0.6 billion-plus.

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The Japanese paper and paperboard industry's on-going efforts to deal with the problems of soft domestic demand and reduced international competitiveness had a mixed impact on U.S. exports of paper base stocks in 1983. Demand for wood chips dropped for the third year in a row as mills again increased their consumption of recycled paper to cut costs. In addition, American suppliers of softwood chips continued to lose some sales to Australian exporters of hardwood chips because of the steady shift in Japanese output from kraft and other "brown" papers to finer grades of paper. On the plus side, though, demand for U.S. wood pulp, which was priced more attractively than its raw material, expanded. Scrap paper exporters also benefited from higher Japanese usage of recycled paper. On balance, therefore, sales of paper base stocks only slipped 1 percent to $0.5 billion.

The problems of another structurally depressed industry -- aluminum refining -- also produced mixed results for U.S. exports. Japanese primary ingot production slumped in 1983 to just one-fourth of 1979's level. With resurgent domestic demand and increased export opportunities pulling up the output of aluminum products to a new high, fabricators in Japan had to depend on a record volume of imports for most of their primary ingot requirements. This country remained the largest foreign supplier, but shipments contracted because rebounding American demand and tight supplies lifted prices in the U.S. spot market well above the prices at which Japanese fabricators could obtain primary ingot from overseas "develop-import" projects or under long-term contract. Sales of aluminum scrap to secondary smelters, which use it to produce ingot mainly for castings but also for beverage-can sheet, expanded, however, largely because of increased foreign demand for Japanese-made can stock. This expansion was enough to push combined U.S. exports of primary ingot and scrap up 11.9 percent to just under $0.6 billion.

Operating conditions in Japan's struggling petrochemical industry improved in 1983, mainly because of lower-cost supplies of its primary feedstock and fuel, naphtha, and the closure of small, inefficient plants for the production of ethylene, one of the basic building blocks for petrochemical intermediates. This progress did not erase the overall cost advantage American producers enjoy in commodity petrochemical intermediates like styrene monomer among the products derived from aromatics (cyclics) and ethylene dichloride and acrylonitrile among the intermediates based on ethylene, propylene and other olefins (acyclics). In some specific commodity products, though, American exporters did lose their edge because the improvement in the Japanese industry's cost structure occurred at a time of recovery-triggered U.S. price hikes. The 1983 export record for petrochemical intermediates was therefore checkered, with cyclic products generally stronger than acyclic compounds. On top of declines in a number of other key chemical exports, most notably radioactive isotopes, the mixed performance of petrochemicals produced a 4.2 percent dip in chemical sales to $1.3 billion.

Food and Feed - Perhaps no major U.S. export faced more uncertain market prospects in 1983 than corn. Japanese demand for livestock and poultry mixed feed -- the end use for three-fourths of corn imports -- had revived in 1982 after two years of no growth, but traders were concerned that higher corn prices and/or lower prices for eggs, milk, broiler meat, pork and beef would choke off the recovery. Their principal fear was that the surge in U.S. corn prices, triggered by last summer's severe drought and the government's

payment-in-kind program, would lead to a big hike in commercially mixed feed prices. List prices did jump twice in 1983's second half, but by using industry-generated or government-supported price stabilization funds, Japanese feed mills were able to maintain 1983 retail mixed feed prices below the levels that had prevailed in 1981 and the first three quarters of 1982. On top of relatively favorable prices for all livestock and poultry products except eggs, the cut in the effective price of mixed feed produced record demand for formula feed. By itself, this development meant extra sales for U.S. corn exporters. In addition, though, corn/sorghum price ratios were tilted for much of the year in favor of increased corn usage. With drought limiting exportable supplies in other corn-exporting countries, American growers reaped double benefit from the strong expansion in Japanese mixed feed production. Equally important, tight supplies of South African maize also enabled U.S. exporters to recapture a significant share of Japan's increasing trade in corn for manufacturing corn sweeteners, corn starch and other processed products. This combination made 1983 a banner year for corn exports: volume climbed 14.1 percent to 513.7 million bushels and sales jumped 37.5 percent to just under $1.8 billion.

Last year also turned out to be a record-shattering year for soybean exports. Despite continued gains in vegetable oil consumption, Japanese oilseed crushers had limited the size of the soybean crush in both 1981 and 1982 because of relatively weak demand for soybean meal in livestock and poultry mixed feed. The sizable expansion in formula feed production in 1983, especially increases in broiler and hog rations, in tandem with a further rise in soybean oil demand eliminated the ceiling on the crush, however. Also helping to boost the crush to a new peak level was another shift in relative protein meal prices. Price ratios, which had favored greater use of rapeseed meal in mixed feed through most of 1982, tilted back toward soybean meal usage, although the soybean meal content of feed did fall late in the year in reaction to drought-induced hikes in the price of U.S. soybeans. Higher feed production and attractive soybean meal prices alone virtually insured all-time-high soybean shipments by the United States -- the supplier of all the soybeans crushed by oilseed processors -- even without any apparent rise in sales of food-use soybeans. What guaranteed record sales, though, was overbuying by the Japanese crushing industry, which was concerned that the 1983 U.S. drought might lead to tight supplies and even higher prices than actually materialized. Together, these developments lifted deliveries 11.9 percent to 167.2 million bushels and elevated sales 24.7 percent to $1.2 billion.

Capital Goods - The strong dollar and generally weak Japanese plant and equipment spending could have easily turned 1983 into another year of disappointing sales for U.S. manufacturers of capital goods. Instead, exports of high-technology products increased almost across the board as big corporations, especially those in the industrial and consumer electronics field, earmarked more money for automation, capacity expansion and/or research and development. The rapid pace of office and factory automation in Japan proved to be a particular boon for American makers of data processing equipment. New hardware and software offerings, including a number of products tailored to the local market, and expanded distribution channels helped U.S. vendors tap the bouyant demand for both systems -- whether microcomputers, minis or mainframes -- and add-on peripherals. International Business Machines Corp., which has launched a counteroffensive in Japan to regain the top spot in the computer market, was the big winner, thanks in large part to the success of its new personal computer for office use and continuing brisk sales of its big

mainframes. With solid performances by other U.S. competitors, exports of data processing equipment went up 9.3 percent to $0.9 billion.

Commercial aircraft rounded out the list of U.S. high technology products scoring export gains in 1983 as sales, which have become increasingly cyclical in recent years, rebounded 98.5 percent to $0.8 billion. Although weak demand for air services kept their finances shaky, Japan Air Lines (JAL) and All Nippon Airways (ANA), Japan's major domestic carrier, took delivery of 11 new large passenger transports ordered earlier in the 1980s. JAL added four of Boeing Co.'s 747s to its fleet, including two 747-200s and two 747-300 SUDs, a new, stretched jumbo jet costing $99 million each. The international carrier also put another of McDonnell Douglas Corp.'s DC-10s into service. For its part, ANA took delivery of six 767s out of an order for 25 of Boeing's new generation of medium-range, medium-capacity jetliners. JAL's purchase of another used 747 freighter also helped to boost the aircraft export total.

Consumer Goods - While the strong dollar and lackluster Japanese consumer spending trimmed sales of a wide range of U.S. consumer durables and nondurables in 1983, pharmaceutical exports continued to increase -- but by a scaled-back 6.5 percent to $0.5 billion-plus. Sluggish demand for first- and second-generation antibiotics and the strong position of Japanese drug houses in third-generation products held down the growth of American-manufactured antibiotics, as did the stiff competition among Japanese makers for market share. In addition, sales of human serum and other blood derivatives, a second major export line, fell, apparently because of a shortage of blood here.

Export Prospects

At first glance, current forecasts for faster, more balanced economic growth in Japan during 1984 and some rise in the yen's value signal relatively strong prospects this year for American exporters. U.S. manufacturers of capital goods will certainly benefit from an expected step-up in the pace of plant and equipment spending, although Japanese airlines may not take delivery of as many jetliners as they did in 1983. Companies producing consumer goods will also continue to make inroads in the Japanese market, however unspectacular the gains. The outlook for agricultural exports is less clear-cut. Corn and soybean shipments are projected to remain at high levels because of anticipated increases in Japanese mixed feed output, but it is unlikely that exports will duplicate their 1983 record-breaking performances. The biggest question mark, though, is industrial supplies. Coal sales will be significantly lower this year than last, while log and lumber exports will be lucky to match 1983 sales. Whether other intermediate goods take up the slack could mean the difference between a so-so year for U.S. exports to Japan or a good year.

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The views expressed in this report are those of the author and do not necessarily represent those of the Japan Economic Institute.

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U.S. Exports to Japan, by Commodity, 1982 and 1983

(in millions of dollars and indicated quantity units)

Commodity	Quantity 1982	Quantity 1983	Value 1982	Value 1983	Percent Change 1982/83	Japan's Share of U.S. Exports 1983
Total Exports			$20,966.1	$21,894.3	4.4%	10.9%
Industrial Supplies			9,172.9	8,733.6	-4.8	15.4
Bituminous Coal	25,766,013 stn	17,863,672 stn	1,525.4	1,002.0	-34.3	25.0
Coking Coal	22,363,738 stn	16,122,384 stn	1,350.7	919.9	-31.9	33.2
Steam Coal	3,402,275 stn	1,741,288 stn	174.7	82.1	-53.0	6.6
Petroleum Products			620.9	639.4	3.0	14.8
Jet Fuel	1,511,121 bbl	0 bbl	61.8	0.0	-100.0	0.0
Light Fuel Oils	4,428,700 bbl	4,936,624 bbl	168.0	158.8	-5.5	19.8
Number 4-Type Fuel Oils	1,029,184 bbl	18,781 bbl	37.1	0.6	-98.4	0.7
Heavy Fuel Oils	5,644,578 bbl	10,694,435 bbl	162.0	276.7	70.8	17.4
Lubricating Oils			26.2	25.4	-3.1	4.2
Petroleum Coke (excl. calcined)	2,428,538 stn	3,557,732 stn	109.4	130.6	19.4	32.9
Natural Gas	52,534,481 mcf	54,124,064 mcf	291.9	266.8	-8.6	99.5
Propane	9,227 bbl	3,158,108 bbl	0.1	68.4	68,400.0	31.5
Nuclear Reactor Fuels	20,134 lb	26,812 lb	114.8	151.8	32.2	39.2
Logs and Lumber	2,606,263 mbf	2,658,823 mbf	1,045.3	899.7	-13.9	42.8
Douglas-fir Logs	999,502 mbf	1,094,147 mbf	428.5	332.3	-22.5	66.3
Western Hemlock Logs	769,965 mbf	704,951 mbf	285.1	239.4	-16.0	65.7
Lumber	627,543 mbf	631,480 mbf	206.7	208.8	1.0	23.2
Paper Base Stocks			484.0	479.0	-1.0	25.7
Wood Chips	2,508,090 stn	2,288,133 stn	206.8	157.0	-24.1	91.6
Wood Pulp	590,176 stn	716,996 stn	265.8	292.2	9.9	20.4
Waste Paper	105,851 stn	266,163 stn	11.3	28.8	154.9	9.3
Paper and Paper Products			239.2	285.4	19.3	11.9
Newsprint	176,164 stn	181,141 stn	81.5	82.9	1.7	65.2
Kraft Linerboard	117,715 stn	189,494 stn	36.1	53.2	47.4	9.2
Coated Container Base Stock	108,834 stn	135,490 stn	70.2	98.3	40.0	41.2
Chemicals (excl. plastics, fertilizers and insecticides)			1,345.1	1,288.5	-4.2	13.3
Cyclic Hydrocarbons			89.8	88.3	-1.7	13.5
Styrene	57,937 stn	83,179 stn	31.3	44.4	41.9	15.1
Para-xylene	21,127,442 gal	18,293,678 gal	38.8	32.1	-17.3	19.1
Cyclic Organic Intermediate Chemical Compounds			100.1	117.8	17.7	11.8
Alcohols, Phenols and Their Derivatives	27,222 stn	37,384 stn	27.8	37.6	35.3	31.8
Nitrogren Function Compounds and Their Derivatives	9,357 stn	21,630 stn	14.0	29.6	111.4	26.1
Acyclic Organic Chemical Compounds			351.6	336.8	-4.2	16.0
Ethylene Dichloride	220,895 stn	300,517 stn	41.6	66.7	60.3	60.3
Ethylene Glycol	90,953 stn	88,326 stn	30.1	28.7	-4.7	24.6
Vinyl Acetate Monomer	68,661 stn	46,968 stn	28.4	18.8	-33.8	14.5
Acrylonitrile	78,844 stn	103,903 stn	47.5	50.8	6.9	22.2
Uranium and Thorium Compounds	591 stn	369 stn	336.5	268.1	-20.3	39.1
Sodium Compounds			27.6	43.8	58.7	8.5
Color Lakes and Toners, Dyes and Paints			34.3	30.1	-12.2	6.2
Antiknock Compounds and Additives for Lubricating Oils			78.8	64.5	-18.1	9.1
Compound Catalysts (excl. nickel)			28.6	30.8	7.7	15.2
Plastic and Synthetic Resin Compounds			295.5	330.8	11.9	9.7
Poly and Copolymerization Type Thermoplastic Resins	14,472 stn	31,704 stn	33.4	71.1	106.7	30.4
Film, Strips and Sheets			40.8	46.7	14.5	8.0

Commodity	Quantity 1982	Quantity 1983	Value 1982	Value 1983	Percent Change 1982/83	Japan's Share of U.S. Exports 1983
Synthetic Rubber			$ 49.1	$ 46.7	-4.9%	8.6%
Fertilizers and Insecticides			248.8	279.1	12.2	8.4
Crude Phosphates	1,247,328 stn	1,684,892 stn	49.7	63.1	27.0	14.9
Fertilizers			95.9	110.1	14.8	8.7
Diammonium Phosphate Fertilizers	335,358 stn	489,961 stn	53.4	75.2	40.8	10.2
Unmixed Pesticides			48.7	48.9	0.4	7.5
Manufactured Pesticides			54.5	57.0	4.6	9.0
Still X-Ray Film	34,836,113 sft	40,044,939 sft	27.1	31.0	14.4	27.0
Photosensitive Papers			29.4	28.5	-3.1	9.8
Steel Scrap	1,529,568 stn	2,599,386 stn	145.1	218.3	50.4	34.3
Nonferrous Ores and Scrap			367.3	308.8	-15.9	21.2
Copper Ore	163,417 stn	32,330 stn	157.2	32.6	-79.3	67.8
Copper Scrap	27,913 stn	21,588 stn	28.6	23.3	-18.5	13.4
Aluminum Scrap	146,357 stn	233,110 stn	106.1	202.5	90.9	80.5
Molybdenum Ore	2,706 stn	2,265 stn	37.4	17.7	-52.7	9.6
Aluminum Ingot	344,608 stn	279,184 stn	392.2	355.1	-9.5	66.5
Unwrought Magnesium	10,787 stn	12,758 stn	21.6	28.3	31.0	25.3
Silver	4,467,184 toz	4,436,696 toz	35.7	51.6	44.5	28.2
Platinum and Platinum Group Metals	201,231 toz	169,779 toz	54.6	54.3	-0.5	46.6
Gold	10,368 toz	95,897 toz	4.4	39.5	797.7	2.9
Iron and Steel (incl. ferroalloys)			45.6	41.5	-9.0	2.8
Unmanufactured Nonmetallic Minerals			92.8	92.4	-0.4	13.4
Kaolin Clay	444,002 stn	415,450 stn	52.8	53.1	0.6	33.6
Manufactured Mineral Supplies			69.2	80.0	15.6	5.7
Industrial Textile Fibers, Yarns and Fabric			71.5	63.5	-11.2	2.7
Raw Cotton	1,486,335 rba	1,394,164 rba	500.6	499.9	-0.1	27.5
Whole Cattle Hides	6,443,988 pc	6,388,331 pc	207.2	224.1	8.2	30.8
Leaf Tobacco	55,159 stn	57,084 stn	309.9	338.5	9.2	23.2
Inedible Tallow	76,424 stn	62,118 stn	33.9	23.8	-29.8	4.5
Food and Feed			4,971.0	5,554.7	11.7	18.0
Corn (excl. seed and popcorn)	450,200,403 bu	513,647,090 bu	1,275.0	1,753.3	37.5	27.5
Sorghum (excl. seed)	73,621,090 bu	25,348,775 bu	205.5	84.1	-59.1	12.0
Soybeans (excl. seed)	149,458,283 bu	167,198,266 bu	970.0	1,209.4	24.7	20.5
Animal Feeds			140.3	158.6	13.0	5.7
Dried Beet Pulp	370,765 stn	402,155 stn	49.4	51.4	4.0	72.2
Alfalfa Meal and Cubes			55.3	66.6	20.4	74.2
Wheat	122,924,724 bu	127,308,710 bu	563.7	589.3	4.5	9.5
Barley	10,832,005 bu	13,923,571 bu	30.5	37.4	22.6	19.5
Fruits and Vegetables			401.2	418.8	4.4	17.1
Lemons	118,258 stn	132,459 stn	69.1	74.2	7.4	79.4
Grapefruit	154,091 stn	185,786 stn	47.3	59.7	26.2	50.9
Oranges and Tangerines	91,502 stn	98,967 stn	51.3	51.9	1.2	22.1
Raisins	17,060 stn	19,664 stn	25.9	22.7	-12.4	25.1
Almonds			37.0	43.5	17.6	17.9
Frozen Vegetables			53.9	61.7	14.5	64.5
Frozen French Fried Potatoes	35,894 stn	41,061 stn	25.4	29.4	15.7	79.4
Meat and Meat Products			529.5	574.2	8.4	48.2
Fresh and Frozen Beef	57,855 stn	65,743 stn	232.4	253.5	9.1	68.4
Fresh and Frozen Beef Offals	34,726 stn	37,065 stn	97.0	84.0	-13.4	38.5
Fresh and Frozen Pork	33,332 stn	37,696 stn	111.4	118.0	5.9	73.1
Fresh and Frozen Poultry	60,313 stn	72,947 stn	67.6	91.5	35.4	35.5

Commodity	Quantity 1982	Quantity 1983	Value 1982	Value 1983	Percent Change 1982/83	Japan's Share of U.S. Exports 1983
Fish and Fish Products			$ 600.4	$ 505.9	-15.7%	55.2%
Fresh and Frozen Whole Salmon	98,407 stn	94,583 stn	316.4	287.9	-9.0	80.7
Fresh and Frozen Whole Herring	32,771 stn	41,700 stn	35.4	52.7	48.9	80.5
Fish Roe	11,106 stn	12,461 stn	95.4	83.2	-12.8	85.8
Frozen Snow Crab	10,861 stn	6,074 stn	61.7	30.7	-50.2	81.0
Capital Goods			4,433.8	5,116.4	15.4	6.1
Nonelectric Machinery			2,874.1	2,936.4	2.2	7.1
Data Processing Equipment			838.3	916.6	9.3	8.3
Computers			205.5	236.0	14.8	10.3
Peripheral Equipment and Parts			573.0	596.5	4.1	7.3
Disk and Tape Storage Units			63.2	71.6	13.3	6.7
Terminals			35.9	37.9	5.6	4.3
Parts			383.5	387.1	0.9	8.0
Magnetic Computer Disks and Tapes			27.1	23.9	-11.8	9.7
Semiconductor Production and Assembly Equipment and Parts			153.6	203.3	32.4	31.0
Measuring, Testing and Controlling Instruments and Parts			457.7	485.8	6.1	10.7
Industrial Process-Type Instruments and Parts			39.3	37.4	-4.8	5.6
Chemical Analysis Equipment and Parts			45.9	45.4	-1.1	9.5
Physical Analysis Equipment and Parts			45.0	54.4	20.9	13.6
Equipment for Testing Electrical, Radio and Communications Circuits and Parts			163.4	174.7	6.9	15.7
Instruments for Measuring or Checking Electrical Quantities and Parts			35.3	41.6	17.8	17.0
Scientific, Professional and Medical Equipment			201.7	225.5	11.8	11.4
Electromedical and Electrotherapeutic Apparatus and Parts (excl. X-ray equipment)			79.2	97.6	23.2	12.5
Medical Equipment Based on X-Rays and Parts			30.7	32.5	5.9	12.8
Other Medical, Dental and Surgical Instruments and Parts			75.7	80.2	5.9	11.0
Power Generating Equipment (excl. aircraft and automotive engines)			87.6	251.2	186.8	10.1
Auxiliary Plant for Steam and Other Vapor Generating Boilers			2.3	68.1	2,860.9	72.4
Gas Turbines and Parts for Mechanical Drives			24.6	87.1	254.1	11.8
Nuclear Reactors and Parts			18.1	26.7	47.5	21.2
Nonfarm Tractors, Parts and Attachments			40.3	32.2	-20.1	2.2
Excavating and Paving Machinery			45.6	36.9	-19.1	2.7
Parts and Accessories for Oil and Gas Field Drilling Equipment			248.8	84.7	-66.0	3.5
Machine Tools and Parts			68.2	50.2	-26.4	7.4
Commercial and Industrial Heating and Cooling Equipment and Parts			45.9	42.4	-7.6	5.4
Pumps and Compressors			47.0	54.1	15.1	3.5
Filtering and Purifying Machinery and Parts			53.2	50.4	-5.3	8.3
Taps, Cocks, Valves and Similar Devices and Parts			36.0	34.9	-3.1	4.9
Equipment for Service Industries			158.2	113.6	-28.2	5.7
Amusement Park Equipment and Parts			35.3	1.5	-95.8	16.9

Commodity	Quantity 1982	Quantity 1983	Value 1982	Value 1983	Percent Change 1982/83	Japan's Share of U.S. Exports 1983
Electric Machinery			$ 571.7	$ 713.2	24.8%	5.4%
Semiconductors			189.4	261.0	37.8	6.0
Integrated Circuits			142.7	200.4	40.4	19.5
Linear Integrated Circuits	13,243,510 ut	35,366,316 ut	18.1	44.9	148.1	26.4
Radar Apparatus (excl. for planes and boats) and Parts			54.1	70.0	29.4	17.5
Generators, Transformers and Accessories			52.6	73.3	39.4	4.4
Connectors			30.5	45.0	47.5	14.9
Transportation Equipment			988.1	1,466.7	48.4	5.0
Civilian Aircraft	8 large transports; 37 general aviation planes and helicopters	12 large transports; 48 general aviation planes and helicopters	420.5	834.8	98.5	14.7
Civilian Aircraft Engines, Parts and Accessories			336.9	361.0	7.2	7.2
Civilian Aircraft Engine Parts			105.4	90.7	-13.9	8.6
Railway Equipment, Parts and Accessories			8.2	45.4	453.7	9.7
Parts for Rolling Stock			6.2	34.1	450.0	39.9
New Cars	3,149 ut	2,322 ut	44.0	31.2	-29.1	0.7
Automotive Parts, Engines and Bodies			124.3	144.5	16.3	1.4
Consumer Goods			1,356.1	1,394.4	2.8	10.4
Pharmaceuticals			510.7	543.8	6.5	20.6
Bulk Antibiotics			141.3	146.8	4.0	21.8
Blood and Blood Derivatives			161.1	138.9	-13.8	43.2
Cigarettes	237,644,800 pk	273,473,150 pk	67.2	80.4	19.6	7.1
Electric Household Appliances			29.9	37.2	24.4	3.0
Stainless Steel Cooking and Kitchenware			43.2	67.5	56.3	80.9
Toys and Sporting Goods			131.5	117.2	-10.9	11.4
Golf Equipment			73.5	62.5	-15.0	49.2
Still Film in Cartridges and Rolls	42,762,067 ut	51,572,726 ut	59.3	72.7	22.6	21.5
Clothing			65.4	44.2	-32.4	5.4
Gem Diamonds and Other Gem Stones			54.0	64.1	18.7	14.7
Printed Material			52.1	54.8	5.2	4.1
Miscellaneous			1,032.3	1,095.3	6.1	7.1
Military-Type Goods			298.2	293.8	-1.5	5.0
Other Domestic Exports			433.0	426.8	-1.4	8.5
Military Aircraft Engine Parts			336.7	344.0	2.2	14.2
Re-exports			301.2	374.7	24.4	8.2

Key to quantity abbreviations:

bbl = barrels
bu = bushels
gal = gallons
lb = pounds
mbf = thousand board feet
mcf = thousand cubic feet
pc = pieces
pk = packs
rba = running bales
sft = square feet
stn = short tons
toz = troy ounces
ut = units

Source: U.S. Department of Commerce, U.S. Exports: Schedule E Commodity by Country (FT 410), December 1982 and December 1983.

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